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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/583,881   | 06/21/2006  | Michio Nishi         | CU-4891 RJS         | 8922             |
| 26530 7590 11/17/2009<br>LADAS & PARRY LLP<br>224 SOUTH MICHIGAN AVENUE<br>SUITE 1600<br>CHICAGO, IL 60604 |             |                      |                     |                  |
| EXAMINER   |             |                      |                     |                  |
| CALANDRA, ANTHONY J  |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 1791   |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/583,881

**Applicant(s)**

NISHI ET AL.

**Examiner**

ANTHONY J. CALANDRA

**Art Unit**

1791

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-9 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9 and 11-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Detailed Office Action***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/8/09 has been entered.

Claims 1 and 8 have been amended. Claims 4 and 10 are canceled. Claims 12 and 13 are new. Claims 1-3, 5-9, and 11-13 are currently pending.

***Response to Arguments***

The examiner has found the applicant's arguments persuasive, specifically the type of rotary drum now claimed. The applicant amended the claims to state that the rotary device had one inlet at the end of the device and outlet at the other end of the device. The applicant further claimed that the wash water was supplied to the paper *in the* drum.

The drum of HAMILTON teaches a rotary drum where the paper/pulp is on the *outside* of the drum. The pulp/paper flows on the outside of the drum and wash water is applied to the outside of the drum. Further there is no inlet or outlet on the ends of the drum for the paper/pulp.

However, upon further search, the examiner has applied new art, specifically, U.S. Patent 6,470,898 KAMO and Handbook for Pulp and Paper Technologists by SMOOK

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1, 2, 6, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-142638 SATORU et al., hereinafter SATORU, in view of U.S. Patent 6,470,898 KAMO, hereinafter KAMO.

*Examiner has included machine translation to English of the SATORU reference which shall be referred to in the below rejection.*

As for claims 1, SATORU discloses a method for recovering paper from gypsum board by separating the paper from said board (*A method of recovering a base paper for gypsum board, which is configured to recover a base paper for gypsum board from a waste material of gypsum board comprising a gypsum core and the base paper for gypsum board adhering thereto* [abstract, paragraph 0002]). SATORU discloses a crushing step prior to a heating step (*breaking the waste material of gypsum board* [paragraph 0002 and paragraph 0008]). Subsequent to the heating step the crushed gypsum and paper is separated by way to a sieve (*separating a gypsum component and a paper piece of the base paper for gypsum board from the broken waste material of gypsum board* [paragraph 0008]). SATORU discloses adding water to the recovered paper, agitating the paper water mixture and the separating adhered gypsum. SATORU completes this operation three times. SATORU does not appear to disclose using a washing drum to complete the washing operation (*washing the separated paper piece with water using a rotary drum-type washing device so as to eliminate a gypsum component adhering to the paper piece* [paragraph 0008]).

KATO discloses a washing drum for [abstract] for cleaning pulp. KATO discloses that the pulp is fed at one end of the rotary drum and leaves out the other end of the rotary air-water through flow drum [column 1 lines 43-45, lines 52-56 and Figure 1 'A' progresses from (4) to (5)]. KATO further discloses a supply of water to the paper inside the drum (*wherein the rotary*

*drum-type washing device comprises a paper piece inlet at one end of rotatably lying air and water through-flow drum and a paper piece outlet at the other end thereof and is capable of supplying washing water to a paper piece in the air and water through-flow drum* [column 2 lines 10-12 and Figure 2 (17)].

At the time of the invention it would have been obvious to additionally wash the agitated used paper of SATORU in the washing device of KATO. The person of ordinary skill in the art would be clearly motivated to use the washer of KATO to obtain a clean pulp as KATO states that the washer enhances filtration and dehydration to give a high cleaning effect [column 1 lines 60-63].

Alternatively, KATO discloses a second known type of washing used paper of contaminants. A person of ordinary skill in the art would reasonably expect that by substituting for or in combining the unit of KATO with the unit SATORU that the paper would be washed. It is *prima facie* obvious to substitute/combine one known component for the same purpose with another known component for the same purpose absent evidence of unexpected results. The person of ordinary skill in the art would expect both washing methods of SATORU and KATO to clean impurities from the pulp.

As for claim 2, as stated above SATORU discloses that prior to separating gypsum from the paper and subsequent to crushing the gypsum board, the crushed material is heated in a rotary kiln [paragraph 0004].

As for claim 6, SATORU discloses that 1.31 kg of paper with gypsum is added to 20 Liters of water or about 1:15.26, paper to water ratio which is slightly outside of the instant

claimed range [paragraph 8]. However, absence evidence of criticality it would have been obvious to optimize the concentration of paper in water used in agitation.

*Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.")*

As for claim 12, KATO discloses a rotary drum for washing paper stock, wherein the wash water discharges out the peripheral wall of the drum [column 6 lines 25-30].

2. Claims 3, 5, 7-9, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-142638 SATORU et al., hereinafter SATORU, in view of U.S. Patent 6,470,898 KAMO, hereinafter KAMO, and Handbook for Pulp and Paper Technologists by SMOOK.

As for claims 3, 7, 8 and 11, SATORU teaches all the limitations as per above. SATORU discloses a crushing device for breaking up the gypsum boar (*a device configured to break a waste material of gypsum board* [paragraph 0002 and paragraph 0008]). SATORU further discloses a sieve for separating gypsum from the paper (*a device configured to separate a burnt gypsum component and a paper piece from the broken waste material of gypsum board* [paragraph 0008]). SATORU discloses a device in which water is added to the recovered paper, agitating the paper water mixture and the separating adhered gypsum (*previously dispersing or mixing the separated paper piece into a portion of washing water before the separated paper*

*piece is introduced to the rotary drum-type washing device*). SATORU completes this operation three times. SATORU does not appear to disclose using a washing drum to complete the washing operation or disclose a dewatering device (*a rotary drum-type washing device configured to wash the separated paper piece with water so as to eliminate a burnt gypsum component adhering to the paper piece, and a device configured to dewater the water-washed paper piece* [paragraph 0008]).

KATO discloses a washing drum for washing pulp [abstract] for cleaning pulp. KATO discloses that the pulp is fed at one end of the rotary drum and leaves out the other end of the rotary air-water through flow drum [column 1 lines 43-45, lines 52-56 and Figure 1 'A' progresses from (4) to (5)]. KATO further discloses a supply of water to the paper inside the drum (*wherein the rotary drum-type washing device comprises a paper piece inlet at one end of rotatably lying air and water through-flow drum and a paper piece outlet at the other end thereof and is capable of supplying washing water to a paper piece in the air and water through-flow drum* [column 2 lines 10-12 and Figure 2 (17)]).

At the time of the invention it would have been obvious to additionally wash the agitated used paper of SATORU in the washing device of KATO. The person of ordinary skill in the art would be clearly motivated to use the washer of KATO to obtain a clean pulp as KATO states that the washer enhances filtration and dehydration to give a high cleaning effect [column 1 lines 60-63].

Alternatively, KATO discloses a second known type of washing used paper of contaminants. A person of ordinary skill in the art would reasonably expect that by substituting



or in combining the unit of KATO with the unit SATORU that the paper would be washed. It is *prima facie* obvious to substitute/combine one known component for the same purpose with another known component for the same purpose absent evidence of unexpected results. The person of ordinary skill in the art would expect both washing methods of SATORU and KATO to clean impurities from the pulp.

Neither KATO nor SATORU disclose the steps that occur after washing of the recovered pulp. SMOOK discloses that the paper pulp can be made into paper via a paper machine [pg. 16-1]. SMOOK discloses that the paper slurry is drained and dewatered on the fourdrinier table and pressed in the press section [pg. 228 Figure 16-1]. At the time of the invention it would have been obvious to the person of ordinary skill in the art to dewater and press the pulp formed by the process of KATO and SATORU is the paper machine of SMOOK. The person of ordinary skill in the art would be motivated to do so to make paper which has a higher value than pulp fibers.

As for claim 5, SATORU/KATO fail to disclose the amount of wash water used during washing of the pulp in the rotary drum. However, the amount of wash water used is a clear result effective variable according to SMOOK [pg. 108 Figure 9-21]. SMOOK discloses as the DF or amount of water on pulp goes up the washing efficiency goes up. Therefore at the time of the invention it would have been obvious to optimize the dilution factor or amount of water used to wash the pulp of SATORU/KATO.

An estimate of the wash water used can be calculated assuming an outlet consistency of ~10% of rotary washer of KATO. Given a DF of 4 from SMOOK {tons wash water - tons water

in discharged pulp = DF} and assuming the outlet consistency of is 10% then the total wash water would be 13 tons of wash water per ton of pulp [consistency of 10% = 9 tons water per ton pulp 9 + 4 tons per ton additional water = 13 tons water per ton pulp].

As for claim 9, SATORU discloses a rotary kiln prior to separating gypsum from the paper and subsequent to crushing the gypsum board which is a device configured to burn the broken waste gypsum board [paragraph 0004].

As for claim 13, KATO discloses a rotary drum for washing paper stock, wherein the wash water discharges out the peripheral wall of the drum [column 6 lines 25-30].

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571) 270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony J Calandra/  
Examiner, Art Unit 1791

/Eric Hug/  
Primary Examiner, Art Unit 1791